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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,494	02/22/2002	Kanji Hata	2002_0244	2630

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EXAMINER

NGUYEN, DONGHAI D

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
10/079,494	HATA ET AL.	
Examiner	Art Unit	
Donghai D. Nguyen	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 21-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-20 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 08/740,992.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/22/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I (claims 1-20) in Paper received on March 26, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "head main body 62". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: --COMPONENT MOUNTING APPARATUS--.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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5. Claims 12-13 and 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "the first ... smaller components" (Claims 12 and 19, lines 2-4) is vague and indefinite since it is unclear as to **all** the component suction nozzles of the first or second mounting head performs suction of the smaller components then **all** the suction nozzles of the first or second mounting head perform suction of the larger components (after all the larger components mount onto the board); or **some** of the suction nozzles of the first or second mounting head performs suction of the smaller components first and then **some** nozzles of the same first and second mounting head section perform suction of the larger components.

The phrase "the first and ... larger components" (Claim 13 and 20, lines 2-4) is vague and indefinite since it is unclear as to **all** the larger components are mounted onto the board then the smaller components are mounted; or the larger components on some of the nozzles of the first or second mounting head section are mounted on the board then the smaller component on some of the suction nozzle of the same mounting head section are mounted.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 1-4, 6-11, and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,002,448 to Kamijima et al in view of US Patent No. 5,233,745 to Morita.

Regarding claims 1 and 14, Kamijima et al disclose a component mounting apparatus (1) comprising: a pair of component supply sections (15) for accommodating a plurality of components (IC chip), the component supply sections being arranged on opposite sides of a board positioning section (Fig. 1); a first and a second mounting head sections (Fig. 1), each comprising a plurality of component suction nozzles (19), the first and second mounting head sections being operable to perform successive suction operations in order to pick up the components with the plural component suction nozzles (), and the first and second mounting head section being operable to successively mount the components respectively sucked by the component suction nozzles onto the board.

However Kamijima et al do not disclose the first and a second mounting head sections, each comprising a rotary member adapted to be rotatively driven about a horizontal axis; the nozzles attached to the rotary member along respective axes which each intersect the horizontal axis, and a recognition section opposed to the rotary member and to perform successive recognition operations of the components respectively sucked by the component suction nozzles by the recognition section upon intermittent rotation of the rotary member at one of the component supply sections and at the board positioning section.

Morita teaches the first and a second mounting head sections (10), each comprising a rotary member (rotating shaft 25) adapted to be rotatively driven about a horizontal axis (arrow R); the nozzles (21/22) attached to the rotary member along respective axes (θ) which each intersect the horizontal axis (P), and a recognition sections (50) opposed to the rotary members to

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perform successive recognition operations of the components respectively sucked by the component suction nozzles by the recognition section upon intermittent rotation (180°) of the rotary member at one of the component supply sections and at the board positioning section (Figs. 4a-j) for speedily mounting electronic components to circuit board (Col. 2, lines 6-8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kamijima et al's apparatus to have the rotary member and recognition sections as taught by Morita for speedily mounting electronic components to circuit board.

Regarding claim 2, Morita also teaches the step of adjusting the postures of the components sucked by the component suction nozzles (col. 6, lines 22-24) for correcting the position of the electronic component.

Regarding claims 3, 4, and 6-7 see Morita Figs. 3A and 4a-j.

Regarding claims 8-11 and 16-18 see Kamijima et al Col. 1, lines 59-69 and col. 4, lines 54-63.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamijima et al in view of Morita as applied to claim 1 above, and further in view of US Patent 5,115,559 to Oyama.

Kamijima et al as modified do not disclose the illuminator for illuminating the components sucked by the component suction nozzles when each of the components is opposed to the recognizing section. However Oyama teaches the illuminator for illuminating the components sucked by the component suction nozzles when each of the components is opposed to the recognizing section for precisely measuring the position of components (Col. 4, lines 46-55). It would have been obvious to one having ordinary skill in the art at the time the invention

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was made to further modify Kamijima et al to have the illuminator for illuminating the components sucked by the component suction nozzles when each of the components is opposed to the recognizing section as taught by Oyama for precisely measuring the position of components.

Allowable Subject Matter

9. Claims 12-13 and 19-20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghai D. Nguyen whose telephone number is (703) 305-7859. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (703) 308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN

A handwritten signature in dark ink, appearing to read 'Peter Vo', with a long horizontal line extending to the right.

PETER VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700